

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for fitting golf equipment, comprising:

collecting data related to the golfer's swing;

determining if the golfer's swing technique should be modified based at least in part on the collected swing data;

when it is determined that the golfer's swing technique should be modified, then providing swing instruction to the golfer; and

when it is determined that the golfer's swing technique should not be modified, then collecting data related to how the golfer's swing launches a golf ball; and

specifying ~~golf equipment~~ a shaft flex based on the collected swing data; and

monitoring how the golfer launches a golf ball using a golf club comprising a shaft characterized by the specified shaft flex to obtain launch data including a launch angle, velocity and speed; and

modifying the golf club characteristics based on the launch data to optimize a launch angle, velocity and spin rate relative to each other by determining an appropriate velocity based on the launch angle or spin rate.

2. (Currently Amended) The method of claim 1, further comprising collecting information related to the golfer's ability and using ~~it the~~ ~~collected~~ ability information to provide swing instruction to the golfer.

3. (Original) The method of claim 2, collecting data related to the golfer's current golf equipment.

4. (Original) The method of claim 3, wherein current golf equipment data comprises shaft flex, lie angle, and loft for at least some of the golfer's current golf clubs.

5. (Original) The method of claim 1, further comprising, when it is determined that the golfer's swing technique should be modified:

providing swing instruction to the golfer to improve the golfer's swing;

collecting data related to the golfer's improved swing;

collecting data related to how the golfer's improved swing launches a golf ball; and

specifying golf equipment based on the collected swing data and launch data for the golfer's improved swing.

6. (Original) The method of claim 1, further comprising determining a load time for the golfer's swing based on the collected swing data.

7. (Original) The method of claim 1, further comprising determining a load pattern for the golfer's swing based on the collected swing data.

8. (Original) The method of claim 1, further comprising determining a load time and a load pattern for the golfer's swing based on the collected swing data and deriving a ramp potential for the golfer's swing from the determined load time and load pattern.

9. (Original) The method of claim 8, further comprising deriving a shaft flex based on the determined load time, the determined load patterns, and the derived ramp potential.

10. (Original) The method of claim 1, further comprising selecting a new shaft length based at least in part on the collected launch data.

11. (Original) The method of claim 10, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft

length and specifying golf equipment based on the collected swing data and launch data collected for the new shaft length.

12. (Original) The method of claim 1, further comprising selecting a new shaft weight based at least in part on the collected launch data.

13. (Original) The method of claim 12, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft weight and specifying golf equipment based on the collected swing data and launch data collected for the new shaft weight.

14. (Original) The method of claim 1, further comprising selecting a new shaft material based at least in part on the collected launch data.

15. (Original) The method of claim 14, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft material and specifying golf equipment based on the collected swing data and launch data collected for the new shaft material.

16. (Original) The method of claim 1, further comprising selecting a new shaft tip size based at least in part on the collected launch data.

17. (Original) The method of claim 16, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft tip size and specifying golf equipment based on the collected swing data and launch data collected for the new shaft tip size.

18. (Original) The method of claim 1, further comprising selecting a new shaft torque based at least in part on the collected launch data.

19. (Original) The method of claim 18, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft torque and specifying golf equipment based on the collected swing data and launch data collected for the new shaft torque.

20. (Original) The method of claim 1, further comprising selecting a new grip based at least in part on the collected launch data.

21. (Original) The method of claim 20, further comprising collecting data related to how the golfer's swing launches a golf ball with the new grip and specifying golf equipment based on the collected swing data and launch data collected for the new grip.

22. (Original) The method of claim 1, further comprising selecting a new grip weight based at least in part on the collected launch data.

23. (Original) The method of claim 22, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft grip weight and specifying golf equipment based on the collected swing data and launch data collected for the new grip weight.

24. (Original) The method of claim 1, further comprising selecting a new club head center of gravity based at least in part on the collected launch data.

25. (Original) The method of claim 24, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft club head center of gravity and specifying golf equipment based on the collected swing data and launch data collected for the new club head center of gravity.

26. (Original) The method of claim 1, further comprising selecting a new ball spin characteristic based at least in part on the collected launch data.

27. (Original) The method of claim 26, further comprising collecting data related to how the golfer's swing launches a golf ball with the new shaft ball spin characteristic and specifying golf equipment based on the collected swing data and launch data collected for the new ball spin characteristic.

28. (Original) The method of claim 1, further comprising determining the lie angle for at least some of the golfer's current clubs and specifying golf

equipment based on the collected swing data and launch data and the determined lie angles.

29. (Original) The method of claim 1, further comprising capturing images of the golfers swing and using the images to provide instruction to the golfer.

30.-39. (Cancelled).

40. (Withdrawn) A golf equipment fitting system, comprising:
a launch module configured to collect launch data related to how a golfer's swing launches a golf ball and to derive launch parameters for the golfer's swing based on the collected launch data;
a shaft module configured to collect swing data related to the golfer's swing and to derive swing parameters for the golfer's swing based on the collected swing data; and
a swing module configured to capture images of the golfer's swing in order to aid in analysis of the golfer's swing.

41. (Withdrawn) The golf equipment fitting system of claim 40, further comprising a color camera coupled with the launch module, wherein the launch module is configured to collect launch data related to how the golfer's swing launches a golf ball marked with color markings using the color camera.

42. (Withdrawn) The golf equipment fitting system of claim 41, wherein the launch module is configured to convert images of the color markings on the golf ball captured by the color camera into spin, speed, and launch angle data.

43. (Withdrawn) The golf equipment fitting system of claim 40, wherein the collected launch data comprises data related to the spin of a golf ball hit by the golfer.

44. (Withdrawn) The golf equipment fitting system of claim 40, wherein the collected launch data comprises data related to the speed of a golf ball hit by the golfer as the golf ball leaves the face of a club swung by the golfer.

45. (Withdrawn) The golf equipment fitting system of claim 40, wherein the collected launch data comprises data related to the launch angle of a golf ball hit by the golfer as the golf ball leaves the face of the club swung by the golfer.

46. (Withdrawn) The golf equipment fitting system of claim 40, wherein the launch module is further configured to derive ball flight characteristics based on the collected launch data.

47. (Withdrawn) The golf equipment fitting system of claim 46, further comprising a display, and wherein the launch module is further configured to display information related to the derived ball flight characteristics.

48. (Withdrawn) The golf equipment fitting system of claim 47, wherein the derived ball flight characteristics comprise carry distance, total distance, and height characteristics.

49. (Withdrawn) The golf equipment fitting system of claim 40, wherein the launch module is further configured to average collected data for a plurality of swings.

50. (Withdrawn) The golf equipment fitting system of claim 40, further comprising a wireless receiver coupled with the shaft module, the wireless receiver configured to receive the swing data.

51. (Withdrawn) The golf equipment fitting system of claim 40, wherein the shaft module is further configured to derive a load time for the golfer's swing based on the collected swing data.

52. (Withdrawn) The golf equipment fitting system of claim 40, wherein the shaft module is further configured to derive a load pattern for the golfer's swing based on the collected swing data.

53. (Withdrawn) The golf equipment fitting system of claim 50, wherein the shaft module is further configured to derive a ramp potential for the golfer's swing based on the collected swing data.

54. (Withdrawn) The golf equipment fitting system of claim 50, wherein the shaft module is further configured to derive a load time, a load pattern, and a ramp potential based on the collected swing data and to derive shaft flex based on the derived load time, load pattern, and ramp potential.

55. (Withdrawn) The golf equipment fitting system of claim 40, further comprising a display, wherein the shaft module is configured to display information related to the collected swing data on the display.

56. (Withdrawn) The golf equipment fitting system of claim 55, wherein the shaft module is configured to display the information in a graphical format.

57. (Withdrawn) The golf equipment fitting system of claim 50, wherein the shaft module is configured to derive a peak deflection associated with the golfer's swing based on the collected swing data.

58. (Withdrawn) The golf equipment fitting system of claim 50, further comprising a video system coupled with the swing module, the video system configured to capture the images of the golfer's swing and provide them to the swing module.

59. (Withdrawn) The golf equipment fitting system of claim 58, further comprising memory coupled with the swing module, the memory configured to store the captured images.

60. (Withdrawn) The golf equipment fitting system of claim 59, further comprising a display, wherein the swing module is configured to display the captured images on the display.

61. (Withdrawn) The golf equipment fitting system of claim 59, wherein the swing module is further configured to freeze the display of the images, fast forward the display of the images, or rewind the display of the images.

62. (Withdrawn) The golf equipment fitting system of claim 40, further comprising an operating system configured to allow a user to access the launch module, shaft module, and swing module as required to achieve an optimum fitting.

63. (Withdrawn) The golf equipment fitting system of claim 62, further comprising a display, and wherein the launch module is configured to display launch information on the display, the shaft module is configured to display swing information on the display, and the swing module is configured to display images of the golfer's swing on the display.

64. (Withdrawn) The golf equipment fitting system of claim 63, wherein the operating system is further configured to allow a user to switch between information displayed by the launch module, shaft module, and swing module, as required in order to achieve an optimum fitting.

65. (Withdrawn) The golf equipment fitting system of claim 62, wherein the operating system is configured to allow a user to input information related to the equipment presently being used by the golfer as part of the fitting process.

66. (Withdrawn) The golf equipment fitting system of claim 62, wherein the operating system is configured to allow a user to generate a report

that includes information related to recommended equipment parameters for the golfer as determined by the launch module and shaft module.

67. (Currently Amended) A method for fitting a golfer with a golf club, comprising:

providing a plurality of golf club heads, each of the plurality of golf club heads comprising a portion of a quick disconnect system;

providing a plurality of golf club shafts, each of the plurality of golf club shafts comprising a mating portion of the quick disconnect system;

determining a baseline configuration for a golf club for use by the golfer, the baseline configuration comprising golf club head parameters and golf club shaft parameters;

selecting a golf club head from the plurality of golf club heads based on the golf club head parameters;

selecting a golf club shaft from the plurality of golf club shafts based on the golf club shaft parameters;

forming a golf club from the selected golf club head and the selected golf club shaft using the quick disconnect system;

monitoring how the golfer launches a golf ball with the golf club; and

selecting at least one of a new golf club head ~~from~~ from the plurality of golf club heads and a new golf club shaft from the plurality of golf club shafts based on how the golfer launches the golf ball;

forming a new golf club from the newly selected golf club head and newly selected golf club shaft using the quick disconnect system; and

monitoring how the golfer launches a gold ball using the new golf club, wherein monitoring how the golf club launches a golf ball comprises monitoring the spin, velocity, and launch angle imparted to the golf ball by the golfer using the golf club, the new golf club head or golf club shaft being selected based on the monitoring in order to optimize a launch

angle, velocity and spin rate relative to each other by determining an appropriate velocity based on the launch angle or spin rate.

68. (Previously Presented) The method of claim 67, wherein a launch monitor is used to monitor how the golfer launches the golf ball.

69. (Previously Presented) The method of claim 67, wherein the steps are repeated until an optimal launch of the golf ball is achieved.

70. (Cancelled).

71. (Previously Presented) The method of claim 70, wherein optimal launch is achieved when the golf club formed using the quick disconnect system produces a combination of spin, velocity, and launch angle that produces the longest and most accurate golf ball flight.

72. (Previously Presented) The method of claim 71, wherein the spin, velocity, and launch angle are monitored using a launch monitor.

73. (Previously Presented) The method of claim 67, wherein each of the plurality of golf club heads comprise configurable weights configured to change the center of gravity of the golf club head, and wherein forming a new golf club comprises configuring the golf club head configurable weights.

74. (Previously Presented) The method of claim 67, wherein the golf club head parameters include at least one of loft, center of gravity, and size.

75. (Previously Presented) The method of claim 67, wherein the golf club shaft parameters include stiffness, length, torque, and weight.

76. (Previously Presented) The method of claim 67, wherein the portion of the quick disconnect system included in each of the plurality of golf club shafts comprises a hosel attached to one end of the golf club

shaft, and wherein the portion of the quick disconnect system included in each of the plurality of golf club heads comprises a bore in the golf club head comprises a bore in the golf club head configured to receive a hosel attached to one of the plurality of golf club shafts, and wherein forming a new golf club comprises inserting the hosel of a golf club shaft into the bore of a golf club head.

77. (Previously Presented) The method of claim 76, wherein the hosel further comprises threads configured to mate with a screw, and wherein the bore further comprises an access for a screw to mate with a hosel when the hosel is inserted in the bore, and wherein forming a new golf club comprises affixing the golf club shaft to the golf club head by screwing a screw into the hosel threads when the golf club shaft is inserted into the golf club head.

78. (Previously Presented) The method of claim 68, further comprising displaying information related to data produced by the launch monitor.